

Remarks

This application relates to methods and formulations for protecting solid-state proteins from the effects of ionizing radiation, which comprise combining the protein with a radiation-protecting amount of methoxysalicylaldehyde derivatives and isopropanol prior to exposing the protein to ionizing radiation.

The claims pending in this application number 1 to 23. Applicant gratefully acknowledges the allowance of claims 3 to 6 and 12 to 23.

Claims 1 and 7 have been rejected under 35 USC 102(b) as being anticipated by Carden (U.S. 4,714,609). Claims 2 and 8-11 are objected to as being dependant upon a rejected base claim. The Examiner's comments have been carefully considered, and the rejection is respectfully traversed.

At page 3 of the Office Action, the Examiner states, "Applicants have not demonstrated that their claimed formulation will not undergo the same tanning reaction which occurs in Carden. The ionizing radiation, which is present in Carden is a different type of radiation than that used in Applicants' examples. Accordingly, the difference between Carden's formulation and Applicants' claimed formulation is not yet established." The Examiner states that the sun emits ionizing radiation and then seems to conclude that such ionizing radiation produces the same effect on solid-state proteins as ultraviolet radiation. This is clearly erroneous. *Ionizing* radiation from the sun does not reach the earth, rather it is blocked by the ozone layer of the earth's atmosphere.

The Examiner's attention is respectfully directed to column 1, lines 23- 26 of Carden, where there is disclosed a summation of known sunscreen compositions which absorb *ultraviolet* radiation in the range of 290-320 nm. The composition is applied to the skin to achieve a desired cosmetic effect in a shortened period of time to avoid over-exposure to the sun's rays.

Applicant herein discloses ionizing radiation, which is defined at page 4, lines 28 to 32 of the instant specification as "corpuscular radiation (e.g.,neutron or electron, or electromagnetic radiation, e.g. gamma) of sufficient energy to ionize or dissociate molecules into free radicals or electrically charged species, the material being irradiated. "

Hawley's Condensed Chemical Dictionary, Fourteenth Edition, defines ionizing radiation as follows:

Radiation, ionizing. Extremely short-wavelength,highly energetic, penetrating rays of the following types: (1) γ -rays emitted by radioactive elements and isotopes (decay of atomic nuclei), (2) X-rays generated by sudden stoppage of fast-moving electrons, (3) subatomic charged particles (electrons, protons, deuterons) when accelerated in a cyclotron or betatron. The term is restricted to electromagnetic radiation at least as energetic as

X-rays, and to charged particles of similar energies. Neutrons also may induce ionization. Such radiation is strong enough to remove electrons from any atoms in its path, leading to the formation of free radicals. These short-lived but highly reactive particles initiate decomposition of many organic compounds. Thus ionizing radiation can cause mutations in DNA and in cell nuclei; adversely affect protein and amino acid mechanisms; impair or destroy body tissue; and attack bone marrow, the source of red blood cells. Exposure to ionizing radiation for even a short period is highly dangerous and for an extended period may be lethal...

Hawley's defines ultraviolet radiation as follows:

Ultraviolet. (UV). Radiation in the region of the electromagnetic spectrum including wavelengths from 100 to 3900 Å. UVA covers the region 315 to 400 Å. UVB covers the region 280 to 315 Å.

Carden does not disclose a composition comprising a methoxysalicylaldehyde and a solid state protein, but rather discloses a composition intended to accelerate skin tanning, which functions by producing a reaction product between free amine groups in the skin and the aldehyde group of vanillin.

It is well settled that in order to sustain a finding of anticipation, all material elements of a claim must be found in one prior art source, In re Marshall, 198 USPQ 344 (Fed.Cir. 1978); In re Kalm, 154 USPQ 10 (CCPA 1967), which must be enabling to one skilled in the art. Akzo v. U.S. International Trade Commission, 1 USPQ2d 1241 (Fed.Cir.1986), i.e. enable that person to understand the nature and operation of the invention.

Carden cannot anticipate the instant invention since Carden discloses neither a composition comprising a methoxysalicylaldehyde and a solid state protein, nor protection from ionizing radiation.

Applicant herein clearly distinguishes from Carden . Withdrawal of all rejections is requested.

This application is believed to be in condition for allowance. Favorable consideration is earnestly solicited.

The Commissioner is hereby authorized to charge any fees required under 37
C.F.R. §§ 1.16 and 1.17, or to credit any overpayment to Deposit Account No. 16-1445.

Respectfully submitted,

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